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Usage Funnels with Warby Parker
Learn SQL from Scratch
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1. Quiz Funnel

1.1 Quiz Funnel

Users can take the style quiz to answer questions about their style preferences. The survey table stores the users' responses to the style quiz questions. This table has 1986 rows. The data is stored in text format. The survey table has three columns:

- question: this column contains the quiz question being answered
- user_id: this column contains the unique ID of the user answering the style quiz
- response: this column contains the answer provided by a given user for a given question

1.1 Quiz Funnel, cont.

Here is an example of the first 10 rows of the survey table:

question	user_id	response
1. What are you looking for?	005e7f99-d48c-4fce-b605-10506c85aaf7	Women's Styles
2. What's your fit?	005e7f99-d48c-4fce-b605-10506c85aaf7	Medium
3. Which shapes do you like?	00a556ed-f13e-4c67-8704-27e3573684cd	Round
4. Which colors do you like?	00a556ed-f13e-4c67-8704-27e3573684cd	Two-Tone
1. What are you looking for?	00a556ed-f13e-4c67-8704-27e3573684cd	I'm not sure. Let's skip it.
2. What's your fit?	00a556ed-f13e-4c67-8704-27e3573684cd	Narrow
5. When was your last eye exam?	00a556ed-f13e-4c67-8704-27e3573684cd	<1 Year
3. Which shapes do you like?	00bf9d63-0999-43a3-9e5b-9c372e6890d2	Square
5. When was your last eye exam?	00bf9d63-0999-43a3-9e5b-9c372e6890d2	<1 Year
2. What's your fit?	00bf9d63-0999-43a3-9e5b-9c372e6890d2	Medium

```
SELECT *
FROM survey
LIMIT 10;
```

1.2 What is the number of responses to each question?

Users give up at different points during the style quiz, so not every user answers every question. By counting the responses to each question, you can see the decline in total responses.

```
SELECT question, COUNT(DISTINCT user_id) as 'total
responses'
FROM survey
GROUP BY 1;
```

question	total responses
1. What are you looking for?	500
2. What's your fit?	475
3. Which shapes do you like?	380
4. Which colors do you like?	361
5. When was your last eye exam?	270

1.3 What are the completion rates of the questions?

- If we divide the number of users completing each step by the number of users who completed the previous step, we can see which questions have the highest and lowest completion rates.
- "Which shapes do you like?" and "When was your last eye exam?" have the lowest completion rates (80% and 75%, respectively).
- The question of preferred shape may be harder to answer than, say, fit or preferred color, because it is hard to judge shape in an online quiz without the opportunity to experience the options with the user's actual face shape. This question is more easily answered during a try-on. Further, it's possible the user has never worn glasses before; in this case he/she probably still has preferred colors but may not have a feel for shape.
- The question of last eye exam may be answered less because the user does not have that information at the ready. If the user has to retrieve it from a file or a website, there is a chance they will instead choose not to answer.

question	total responses	percent completed this question
1. What are you looking for?	500	100.00%
2. What's your fit?	475	95.00%
3. Which shapes do you like?	380	80.00%
4. Which colors do you like?	361	95.00%
5. When was your last eye exam?	270	74.79%

2. Home Try-On Funnel

2.1 Home Try-On Tables

Here are the first 5 rows of the tables associated with home try-ons:

user_id	style	fit	shape	color	
4e8118dc-bb3d-49bf-85fc-cca8d83232ac	Women's Styles	Medium	Rectangular	Tortoise	
291f1cca-e507-48be-b063-002b14906468	Women's Styles	Narrow	Round	Black	
75122300-0736-4087-b6d8-c0c5373a1a04	Women's Styles	Wide	Rectangular	Two-Tone	
75bc6ebd-40cd-4e1d-a301-27ddd93b12e2	Women's Styles	Narrow	Square	Two-Tone	
ce965c4d-7a2b-4db6-9847-601747fa7812	Women's Styles	Wide	Rectangular	Black	

user_id	number_of_pairs	address			
d8addd87-3217-4429-9a01-d56d68111da7	5 pairs	145 New York 9a			
f52b07c8-abe4-4f4a-9d39-ba9fc9a184cc	5 pairs	383 Madison Ave			
8ba0d2d5-1a31-403e-9fa5-79540f8477f9	5 pairs	287 Pell St			
4e71850e-8bbf-4e6b-accc-49a7bb46c586	3 pairs	347 Madison Square N			
3bc8f97f-2336-4dab-bd86-e391609dab97	5 pairs	182 Cornelia St			

user_id	product_id	style	model_name	color	price
00a9dd17-36c8-430c-9d76-df49d4197dcf	8	Women's Styles	Lucy	Jet Black	150
00e15fe0-c86f-4818-9c63-3422211baa97	7	Women's Styles	Lucy	Elderflower Crystal	150
017506f7-aba1-4b9d-8b7b-f4426e71b8ca	4	Men's Styles	Dawes	Jet Black	150
0176bfb3-9c51-4b1c-b593-87edab3c54cb	10	Women's Styles	Eugene Narrow	Rosewood Tortoise	95
01fdf106-f73c-4d3f-a036-2f3e2ab1ce06	8	Women's Styles	Lucy	Jet Black	150

```
SELECT *
FROM quiz
LIMIT 5;
SELECT *
FROM home_try_on
LIMIT 5;
SELECT *
FROM purchase
LIMIT 5;
```

2.1 Home Try-On Tables, cont.

The tables associated with home try-on's have the following columns:

- quiz
  - user_id
  - style
  - fit
  - shape
  - color
- home_try_on
  - user_id
  - number_of_pairs
  - address
- Purchase
  - user_id
  - product_id
  - style
  - model_name
  - color
  - price

2.2 Home Try-On Funnel, cont.

Here is an example of the first 10 rows of the home try-on funnel showing user ID, whether or not a home try-on occurred, how many pairs were tried, and whether or not the customer made a purchase:

user_id	is_home_try_on	number_of_pairs	is_purchase
4e8118dc-bb3d-49bf-85fc-cca8d83232ac	1	3 pairs	0
291f1cca-e507-48be-b063-002b14906468	1	3 pairs	1
75122300-0736-4087-b6d8-c0c5373a1a04	0	Ø	0
75bc6ebd-40cd-4e1d-a301-27ddd93b12e2	1	5 pairs	0
ce965c4d-7a2b-4db6-9847-601747fa7812	1	3 pairs	1
28867d12-27a6-4e6a-a5fb-8bb5440117ae	1	5 pairs	1
5a7a7e13-fbcf-46e4-9093-79799649d6c5	0	Ø	0
0143cb8b-bb81-4916-9750-ce956c9f9bd9	0	Ø	0
a4ccc1b3-cbb6-449c-b7a5-03af42c97433	1	5 pairs	0
b1dded76-cd60-4222-82cb-f6d464104298	1	3 pairs	0

```
SELECT DISTINCT q.user_id,
    h.user_id IS NOT NULL AS 'is_home_try_on',
    h.number_of_pairs,
    p.user_id IS NOT NULL AS 'is_purchase'
FROM quiz q
LEFT JOIN home_try_on h
    ON q.user_id = h.user_id
LEFT JOIN purchase p
    ON p.user_id = q.user_id
LIMIT 10;
```

2.3 Home Try-On Conversion Rates

- Out of the 1000 users who took the quiz, 750 completed a home try-on. This is a 75% conversion from quiz to home try-on.
- Out of the 750 users who completed a home try-on, 495 made a purchase. This is a 66% conversion rate from home try-on to purchase.
- This data shows that there is room for improvement with both conversions. Warby Parker should work on getting more quiz takers to do a home try-on. Maybe this could be done by incentivizing the completion of the quiz. Warby Parker could provide a code for a free promotional item (e.g. a microfiber cleaning cloth) at the end of the quiz. The free item will arrive with the home try-on package, so quiz takers would need to complete a home try-on to capitalize on their reward. This could help move users to the home try-on stage.

```
WITH funnels AS (SELECT DISTINCT q.user_id,
    h.user_id IS NOT NULL AS 'is_home_try_on',
    h.number_of_pairs,
    p.user_id IS NOT NULL AS 'is_purchase'
FROM quiz q
LEFT JOIN home_try_on h
    ON q.user_id = h.user_id
LEFT JOIN purchase p
    ON p.user_id = q.user_id)
SELECT count (*) as 'Num_Quiz',
sum(is_home_try_on) as 'Num_Home_Try_On',
sum(is_purchase) as 'Num_Purchase',
1.0 * SUM(is_home_try_on) / COUNT(user_id) as 'Quiz_to_Tryon',
1.0 * SUM(is_purchase) / SUM(is_home_try_on) as 'Tryon_to_Purchase'
from funnels;
```

- The try-on to purchase conversion rate is only 66%, so Warby Parker also needs to help customers pull the trigger on purchasing. They could do this by offering 5% off to users who share a photo of their home try-on on social media and link to the quiz. This would help make the sale, and it would also help expose more people to the quiz!

Num_Quiz	Num_Home_Try_On	Num_Purchase	Quiz_to_Tryon	Tryon_to_Purchase
1000	750	495	0.75	0.66

2.4 What users like vs. what they purchase

user_id	Quiz Color	Purchase Color
291f1cca-e507-48be-b063-002b14906468	Black	Rosewood Tortoise
ce965c4d-7a2b-4db6-9847-601747fa7812	Black	Rose Crystal
28867d12-27a6-4e6a-a5fb-8bb5440117ae	Black	Pearled Tortoise
b645be99-7725-439b-8bde-7dc01f8af947	Black	Elderflower Crystal
1139a085-c06a-4292-af6f-1a7e8c9c0ab3	Black	Pearled Tortoise
43fc2b6c-f477-4f20-9990-eaf024aa63bf	Black	Sea Glass Gray
026e11d9-926c-4206-af7c-273e3ee6ad7f	Black	Sea Glass Gray
05dc640b-5112-41b0-8169-6d957a93f779	Black	Layered Tortoise Matte
965f2bdf-9b48-4dec-b8df-f5857531ed50	Black	Rose Crystal
c24cb446-6e22-4674-8a03-7ac4c7cb520d	Black	Jet Black
b9953466-8204-46a7-985d-6d3d1d5e982b	Black	Elderflower Crystal
dd3284f9-5d92-489a-98c6-73acb5e668f5	Black	Layered Tortoise Matte
7f855658-7994-4f86-a978-f8c8f9c5bd6a	Black	Jet Black
b71d7b8c-8d57-4654-8d3d-c360d95db754	Black	Rose Crystal
7f769f16-ba7c-45f6-bb9c-45cc54d9e231	Black	Sea Glass Gray
7caddbcb-f74b-4b62-a45d-b96cd2a4c86c	Black	Rose Crystal
9f6d215e-b3fd-4f77-ac16-5ddbfe5c0edc	Black	Rosewood Tortoise
47b60960-820c-4e77-8595-2e2e31d77182	Black	Layered Tortoise Matte
6b2c81f0-3d31-4f8c-ae3e-25998d487682	Black	Jet Black
2cc56e4b-bad8-4d33-a908-045f776fbed6	Black	Jet Black

This data sample looks at 20 unique users who said they preferred black in the quiz. You can see, only 4 out of 20 purchased black glasses! This demonstrates that customers are really enjoying the non-black offerings. Warby Parker may be able to make more sales if they make sure the non-black colors are available for home try-ons.

```
SELECT DISTINCT q.user_id, q.color AS 'Quiz Color',
p.color 'Purchase Color'
FROM quiz q
LEFT JOIN home_try_on h
    ON q.user_id = h.user_id
LEFT JOIN purchase p
    ON p.user_id = q.user_id
    WHERE p.color IS NOT NULL and q.color like
'black'
    limit 20;
```